REMARKS

Amendments to the Claims

Applicants have amended claims 1, 3, 4, 5, 7-9, 11, and 16. The amendments to the claims are supported by, inter alia, page 2, lines 7-9, page 11, lines 21-23, page 12, lines 4-12, page 15, lines 20-24 of the application. No new matter has been entered.

Amendments to the Drawings

Applicants have submitted a replacement drawing sheet that replaces FIGURES 5A and 5B with FIGURE 5. FIGURE 5 conforms to the description of the drawings in the original application. No new matter has been entered.

Amendments to the Specification

Applicants have amended the specification. Support for the changes is present in the original specification at page 10, lines 25, page 11, lines 1-3, page 13, lines 24-25. and page 10, lines 25-26 among other locations. No new matter has been entered.

Rejection under 35 U.S.C. § 112, second paragraph

Claims 1-10 are rejected under 35 U.S.C. § 112, second paragraph as being indefinite.

In regard to claim 1, the Examiner has stated that the phrase "one cell that describes a device" is unclear in view "wherein the instances describe devices that are used to form the functionality of a cell."

Applicants have deleted the phrase "wherein the instances describe devices that are used to form the functionality of a cell" from claim 1 for the purpose of broadening the scope of claim 1. The deletion has not narrowed the claims and has not been made in view of any prior art.

In regard to claim 4, the Examiner has stated that the term "O(log N)" is not understood.

Applicants respectfully submit that the notation "O(logN)" has a recognized meaning within the art of data processing. The general notation "O()" refers to the amount of time or the number of operations required to perform an action (e.g., locate an identified data structure in a list). The amount of time required to perform an action can be dependent upon the number of elements. For example, if there is a linear relationship between the number of elements and the time required for an action, the notation O(N) would be used. In the present case, O(logN) means that the time required to perform an action is a log function of the number of elements present. Applicants refer the Examiner to col. 1, lines 36-53 of U.S. Patent No. 6,636,849 (attached hereto as Exhibit A) to support the assertion that this notation has a recognized meaning.

Accordingly, Applicants submit that claims 1-10 are definite.

Rejection under 35 U.S.C. § 103(a)

Claims 1-20 are rejected under 35 U.S.C. § 103(a) as being unpatenable over Applicant's admitted prior art (hereinafter "AAPA").

To establish a prima facie case of obviousness, three basic criteria must be met. First, there must be some suggestion or motivation, either in the references themselves or in the knowledge generally available to one of ordinary skill in the art to modify the reference or to combine reference teachings. Second, there must be a reasonable expectation of success. Finally, the prior art cited must teach or suggest all the claim limitations. *See* M.P.E.P. § 2143. Applicants submit that the rejection does not satisfy these criteria.

Claim 1

Claim 1 recites, in part:

> defining at least one cell that identifies a collection of elements constituting a device;
> defining one or more instances of said at least one cell within the system using a folded circuit model;
> defining occurrence nodes for each of said one or more instances, wherein said occurrence nodes are arranged in one or more hierarchical levels; and
> associating the occurrence nodes with the one or more instances.

The Examiner has noted that the application discloses that the folded circuit model and the occurrence circuit model are known. Also, the Examiner has asserted that the occurrence model necessarily involves "occurrence nodes" and "pointers." Office Action, page 4.

Applicants respectfully traverse the Examiner's statements regarding Applicants' description of AAPA. First, although the folded circuit model and the occurrence circuit model were known, Applicant has not admitted that there was any functional relationship between known folded models and occurrence models. Specifically, both models could be used to model the same circuit. However, both models would remain independent and would not provide information detailing the structure of the other model according to AAPA.

Claim 1 recites "associating the occurrence nodes with the one or more instances" of "the folded model." Accordingly, claim 1 recites a functional relationship between the folded model and the occurrence nodes. Thus, AAPA does not teach or suggest each and every limitation of claim 1. Furthermore, AAPA does not provide motivation for associating the occurrence nodes in the manner recited by claim 1.

Therefore, a prima facie case of obviousness has not been established for claim 1. Claims 2-10 depend from claim 10 and, hence, inherit all limitations of claim 10. A prima facie case of obviousness has not been established for claims 2-10.

Claims 7, 11, and 16

In the rejection under 35 U.S.C. § 103(a), the Examiner has further asserted that the occurrence model necessarily involves "occurrence nodes" and "pointers." Office Action, page 4.

Without conceding whether known occurrence models include "pointers," claims 7, 11, and 16 recite significant detail beyond mere "pointers" that is not addressed by the rejection. In particular, claim 7 recites "describer pointer information that points to information in said folded model that is common to a plurality of the occurrence nodes." Likewise, claim 11 recites "defining occurrence nodes, wherein each occurrence node identifies a corresponding instance in said folded model." Claim 16 recites "wherein said

describer pointers point to instances of a folded circuit model that are associated with cells that define circuit elements of said occurrence nodes."

Applicants respectfully note that "[a]ll words in a claim must be considered in judging the patentability of that claim against the prior art." *In re Wilson*, 165 USPQ 494, 496 (CCPA 1970). Also, all of the claimed limitations must be taught or suggested by the prior art. *In re Royka*, 180 USPQ 580 (CCPA 1974).

As previously discussed, the folded models and the occurrence models described in AAPA are functionally separate and independent. There is no basis in the AAPA to teach or suggest "describer pointer information," identifying "a corresponding instance in said folded model," or "describer pointers" as recited by claims 7, 11, and 16. Moreover, storing such information in occurrence nodes as recited by claims 7, 11, and 16 enables an efficient memory representation and efficient circuit model traversal. *See* application, page 6, lines 25-28 and page 14, lines 15-30.

Also, as previously noted in regard to claim 1, there is no motivation to combine the folded model with occurrence nodes.

A prima facie case of obviousness has not been established for claims 7, 11, and 16. Claims 12-15 and 17-20 depend from base claims 11 and 16 and, hence, inherit all limitations of their respective base claim. Therefore, a prima facie case of obviousness has not been established for claims 12-15 and 17-20.

New Claims

Applicants have added a new claim set (claims 21-27). These claims are supported by, inter alia, pages 10-15 of the application. No new matter has been entered.

Independent claim 21 recites, in part:

> defining a folded model of said circuit, wherein said folded model represents said circuit as a linked structure of cells and instances of the cells, wherein each cell defines a respective collection of elements constituting a device and the linked structure is constructed such that each instance of the same cell points to the same cell; and
>
> defining occurrence nodes to provide data members for storing circuit information unique to the corresponding instances of the folded model, wherein each occurrence

node identifies a corresponding instance of said folded model and identifies an owner occurrence node in a previous hierarchical level.

For the reasons discussed above with respect to the rejection under 35 U.S.C. § 103(a), Applicants submit that claim 21 is patentable. Claims 22-27 depend from claim 21 and, hence, are also submitted to be patentable.

Conclusion

In view of the above, each of the presently pending claims in this application is believed to be in immediate condition for allowance. Accordingly, the Examiner is respectfully requested to pass this application to issue.

Applicants believe no fee is due with this response other than the new claims fees addressed in the accompanying transmittal. However, if any other fee or fee amount is due, please charge Deposit Account No. 08-2025, under Order No. 10007479-1 from which the undersigned is authorized to draw.

I hereby certify that this correspondence is being deposited with the United States Postal Service with sufficient postage as Express Mail, Airbill No. EV482736855US in an envelope addressed to: MS Amendment, Commissioner for Patents, P.O. Box 1450, Alexandria, VA 22313-1450.

Date of Deposit: May 5, 2004

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Respectfully submitted,

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